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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/075,840

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Ken Anderson

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06/22/2004

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EXAMINER

JUBA JR, JOHN

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,840

Applicant(s)

ANDERSON, KEN

Examiner

John Juba, Jr.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 36-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6, 8, 12, 13, 37, 38, 46, 49-51 and 59 is/are rejected.
- 7) ☒ Claim(s) 2-4, 7, 9-11, 14, 36, 39-45, 47, 48, 52-58, 60, 61 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 5, 6, 8, 12, 13, 37, 38, 46, 49, 50, 51, and 59 are rejected under 35 U.S.C. 102(a) as being anticipated by FUJI XEROX (JP 2000-268380 A). Referring *primarily* to Figure 3 and the associated text of the attached machine translation, disclose a hologram recording apparatus comprising polarizing beam splitter in the output arm of the object beam and a detector. The basic operation is described in paragraph [0019]. A first image, containing an alignment pattern is recorded using a P-polarized alignment (object) beam and a P-polarized reference beam that interfere to form an amplitude-type hologram containing an alignment image. A second hologram is multiplexed in the same region using a P-polarized data (object) and an S-polarized reference beam that interfere to form a polarization-modulating hologram containing data. Due to the presence of the first, alignment hologram, the output arm of the data beam contains (in addition to 0-order P-polarized data) S-polarized light diffracted by the alignment hologram (see paras. [0044] – [0047]). During the second write operation, the S-polarized alignment pattern may be regarded as an “offset” component of the output arm of the data beam. Since FUJI XEROX disclose a control circuit responsive

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to the detected alignment pattern to position the optical head, the detector (53s) must be regarded as being “for” (capable of) measuring the offset component.

With regard to claims 37, 50, and their respective dependent claims, the offset component “characterizes” a difference between the (P) polarization of the first component of the source beam and the (S) polarization of the second component of the source beam, in that during recording of the second, polarization-modulated hologram, the offset beam contains as (S polarized light) reference light diffracted by the amplitude-type alignment pattern, and no contribution from the P-polarized data beam. If the offset component contains contributions other than from the intensity modulated alignment pattern, then, the first component of the source beam is not orthogonal to the second component of the source beam.

With regard to claims 6 and 38, the act of passing the source beam through splitter (24) may be regarded as “adjusting” the polarization, since light containing a single polarization is derived from light having a different polarization orientation.

With regard to claims 8 and 50, the apparatus comprises a laser (21); a beam splitter (24) for splitting the source into two components (2) and (3); a data-beam source (26) for generating a data beam (4) having a first (P) polarization; a reference beam source (28) for generating a reference beam by adjusting the second component (3) of the source beam to have a second polarization (6)(P/S); a holographic medium (10); a polarization beam splitter (52) for separating an offset component (alignment image) from the output arm (7) of the data beam; and a detector (53s) for measuring the offset component.

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With regard to claims 13 and 51, FUJI XEROX disclose the data beam source (26) as suitably being a liquid crystal display panel. It will be appreciated that liquid crystal panels "adjust" the polarization of light passing therethrough.

With regard to claims 46 and 59, an output power unit and measurement inheres among the detector (53s) and control circuit 70 of FUJI XEROX, since the intensity of the diffracted alignment pattern must be detected before a determination respecting alignment can be made. Thus, FUJI XEROX monitor power within the specificity recited in these newly presented claims.

Allowable Subject Matter

Claims 2 – 4, 7, 9 – 11, 14, 36, 39 – 45, 47, 48, 52 – 58, 60 and 61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art, taken alone or in combination, fails to teach or to fairly suggest *in combination*,

the steps or structure for detecting the output *power*, detecting the input *power*, and determining a diffraction efficiency, as recited in claims 2, 3, 9, 10, 43 – 45, and 56 - 58;

the steps or structure for detecting the output *power*, and monitoring for stability , as variously recited in claims 4, 11, 42, 48, 55, and 61;

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the apparatus wherein the second polarization differs from the first polarization by a “small” rotation, or the step of causing this to be the case, as variously recited in claims 7, 14, 39, 40, 52, and 52; or

the steps or structure for detecting the output *power*, and monitoring for a termination condition, as variously recited in claims 36, 41, 47, 54, and 60.

Response to Amendment

Applicant’s amendment is sufficient in overcoming the previous rejection of claim 12 under 35 U.S.C. §112, second paragraph.

Applicant’s remarks concerning the rejection of claims 1, 5, 6, 8, 12, and 13 have been fully considered, but are not found persuasive. Applicant’s remark that “the data beam” occurs for recording a hologram *and* for “measuring an offset component in an output arm of the data beam” apparently seeks to ascribe particular meanings to “the data beam” and to “an output arm of the data beam”, whereas, in light of the specification, these expressions are not so limited. For example, at Page 3 (lines 19 – 23) of the instant specification, the expression “data beam” also describes the data beam *as it is read out* of the hologram using a substantial duplicate of the reference beam. This read-out “data beam” is also described as comprising “an output arm of the data beam”. It is clear from Page 9 (paragraph starting with line 4) that an “output arm of the data path” is active even when the input arm of the data path is not.

Applicant would construe the expression “an output arm of the data beam” [emphasis added] to mean only an output arm of *the said-same data beam used to*

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record the hologram. However, in light of the specification, the examiner believes that one of ordinary skill would not *necessarily* be lead to this inference. In the disclosed method, multiple holograms may be recorded in the "holographic medium". Noting the order of steps recited in claims 1 and 37, and even considering the preamble of the claim, one of ordinary skill would not *necessarily* infer that "the diffraction" monitored during recording of one hologram is the diffraction of the hologram being recorded. Rather, the diffraction monitored could be the diffraction of one of the pre-recorded alignment holograms; while the "offset component" measured could be the offset component in the last hologram recorded. The language of the claims does not necessarily tie the "measuring of an offset component" to the preambular recitation of "monitoring diffraction" nor does it necessarily tie the "measuring" to the hologram *as it is being recorded*.

In order to distinguish apparatus claims 8 and 50 over the prior art, Applicant would rely upon the recitations of the polarizing beam splitter as being "for separating an offset component from an output arm of the data beam" and of the detector as being "for measuring the offset component". However, the examiner finds that the beam splitter and detector of the prior art apparatus are arranged in such a manner as to be clearly capable of such use. The manner of operating the apparatus, and similarly, the intended use of these components during operation of the apparatus, fails to distinguish the apparatus *itself*, since the structures of the claimed apparatus and the prior art are quite apparently the same.

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Even assuming, *in arguendo*, that Applicant's proposed claim construction is the only reasonable construction, then it should be noted that the offset component of FUJI XEROX is *inherently* present during the step of recording the second (polarization-modulated) hologram of data. See for example, the method discussed in paragraphs [0044] - [0047] of the reference.

Conclusion


THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (571) 272-2314. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Drew Dunn whose number is (571) 272-2312 and who can be reached on Mon.- Thu., 9 - 5.

The centralized fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for *all* communications.


JOHN JUBA, JR.
PRIMARY EXAMINER
Art Unit 2872

June 21, 2004